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DRL No. 27 DRD No. \$\tilde{\ti

NASA CR-

147599

SMS Data Book

NASA Contract NAS-9-14919 Type 2 Data

Date: 2 April 1976

(NASA-CR-147599) SMS DATA BOOK (Singer Co., Binghamton, N.Y.) 27 p HC \$4.00 CSCL 14B

N76-22232

Unclas G3/14 25344 INFUL DRAINGE

Singer Simulation Products Division Binghamton, New York

#### **FOREWORD**

The Data Book is prepared in sections, with each section representing a subsystem development activity. The information contained in this document is required at PDR and at CDR.

Because PDR's and CDR's are scheduled on an incremental basis, the Data Book sections are prepared incrementally consistent with the scheduled dates for associated subsystem PDR's and CDR's.

The initial release of the Data Book will contain sections required for the first PDR's held. Sections required for subsequent PDR's will be released as changes to the initial release. Revision A of the Data Book will initially contain sections required for the first CDR's held. Section required for subsequent CDR's will be released as changes to Revision A.

Data Book
DRJ Item 27, DRD SE-084TB

#### 1.0 General

The Data Book for the Shuttle Mission Simulator (SMS) is contained in separate sections of this document. These sections are generated individually for use during the design reviews held for the applicable systems of the SMS.

The sections of the SMS Data Book are listed below:

Section 1 - Electrical Power System (EPS)

Section 2 - Mechanical Power System (MPS)

Section 3 - Main Prop & Ext. Tank

Section 4 - Solid Rocket Booster

Section 5 - Reaction Control System

Section 6 - Orbital Maneuvering System

Section 7 - Guidance, Navigation & Control

Section 8 - Comm and Tracking Insts.

Section 9 - Env. Cont. & Life Support

Section 10 - Data Processing System

Section 11 - Mechanical System

Section 12 - Payload Accommodation (Not Required)

Section 13 - Vehicle Dynamic System

Section 14 - Mission Control Center Interface

Section 15 - Image Generation System

Section 16 - Image Display System

Section 17 - Image Processing & Control

Section 18 - Software Stds & Support Software

Section 19 - Utility Software

Section 20 - Crew Stations V

Section 21 - Motion Base (Not Required)

Section 22 - Instructor Operator Stns/

Section 23 - Digital Computer Complex

Section 24 - Signal Conv. & Ancillary

DRL No. 27

DRD No. SE-084TB

JSC No. 11012

#### Data Book

# Release Control Sheet

First Release - 2 April 1976

This release of the Data Book consists of the follow-

# ing section(s):

| Section | Description                   |
|---------|-------------------------------|
| 20      | Crew Station                  |
| 22      | Instructor/Operator Station   |
| 24      | Signal Conversion & Ancillary |

# "SMS-Data Book"

IDENTIFYING INCREMENTAL SECTION RELEASE SHEET

The following is part of Section 20, WP #20, Subsections:

- a) Crew Station (Structure)
- b) Crew Station (Controls & Displays)

#### DATA BOOK

- A. Crew Station (Structure)
- 1.0 <u>Scope</u>

section of the SMS Data Book identifies the design data base for the Crew Station - Structure (Forward).

# 2.0 Design Data

The Design Data used in the Crew Station - Structures & Panels is listed in Table 2.0-1.

# 2.1 <u>Assumptions</u>

1) The new panels for 102 will fit into the structure designed for OAS except for the overhead panels & structure.

# SMS DATA BOOK - TABLE 2.0-1 SYSTEM CREW STATION - STRUCTURES

| ITEM | NUMBER DESCRIPTION                     | SOURCE                                   | COMMENTS                                  |
|------|--|--|---|
| 1    | VO70-333201 CTR CONSOLE INSTL          | NASA                                     |   |
| 2    | VO70-333401 RIGHT SIDE CONSOLE         | NASA                                     | REV A02                                   |
| 3    | VO70-333101 MAIN DISPLAY CONSOLE       |  | REV. A01                                  |
| 4    | VO70-333102 ASSY MAIN DISPLAY          |  |   |
| 5    | VO70-333103 MAIN DISPLAY CLOSEQUT.     |  |   |
| 6    | VO70-333104 AFT STIFF CTR MAIN DISPLA  | Y  |   |
| 7    | VO O-333108 SPLICE-FRAME MDC           |  |   |
| 8    | VO70-333109 OUTBD FRAME                |  | REV. A02                                  |
| 9    | VO70-333110 FRAME OUTBD REINF.         | en e | an en |
| 10   | VO70-333115 OUTBD-AFT STIFF            | ·  |   |
| 11   | V70-33-215 PANEL PLANE DEF.            |  | 1-06-75                                   |
| 12   | V70-33-215.01 PANEL PLANE DEF.         |  | 12-05-74                                  |
| 13   | V70-33-212 PANEL PLANE DEF.            | •  | 10-14-74                                  |
| 14   | V70-33-212.01 PANEL PLANE DEF.         |  | 12-02-74                                  |
| 15   | V70-33-214 PANEL PLANE DEF.            | · · · · · · · · · · · · · · · · · · ·    | 10-10-74                                  |
| 16   | V70-33-213 PANEL PLANE DEF.            |  | 11-04-74                                  |
| 17   | V70-33-211 PANEL PLANE DEF.            | ·  | 11-04-74                                  |
| 18   | V70-33-211.01 PANEL PLANE DEF.         |  | 11-04-74                                  |
| 19   | V070-730820 DISPLAY & CONTROLS         |  |   |
| 20   | VO70-333126 MDC BASE                   |  | REV. A02                                  |
| 21   | VO70-333100 SUPPORT STRUCT INSTL       |  |   |
| 22   | VO70-333248 PANEL SPEED BRAKE          |  | REV. A01                                  |
| 23   | VO70-333253 FRAME CENTER CONSOLE AFT   |  | REV. A02                                  |
| 24   | VO70-333261 ZEE CENTER CONSOLE SUPPORT | r  |   |
| 25   | VO70-333263 HINGE CENTER CONSOLE ACCES | SS                                       |   |

| ITEM | NUMBER      | DESCRIPTION   | SOURCE   | COMM | ENTS       |
|------|-------------|---|--|------|------------|
| 26   | V070-333254 | FRAME INTERMED. CTR CONSOLE   | •  | REV. | A01        |
| 27   | V070-333204 | AFT PNL SUPPORT CTR CONSOLE   |  | REV. | A04        |
| 28   | V070-333205 | TEE FL ATTACH L&R CTR CONSO   | LE   | REV. | A04        |
| 29   | V070-333206 | ANGLE CTF CONSOLE FWD   |  | REV. | A02        |
| 30   | V070-333207 | AFT PANEL CTR CONSOLE   |  | REV. | <b>A01</b> |
| 31   | V070-333211 | WEB CTR CONSOLE AFT PANEL   |  | REV. | A01        |
| 32   | V070-333215 | PANEL CTR CONSOLE MID SECT.   |  | REV. | A01        |
| 33   | V070-333216 | WEB CTR CONSOLE FWD PANEL   |  | REV. | A02        |
| 34   | V070-333219 | CTR PANEL C L&R   |  | REV. | A01        |
| 35   | V070-333222 | MDC FITTING   |  | REV. | A02        |
| 36   | V070-333224 | PNL CTR CONSOLE FWD WEB   |  |      |            |
| 37   | V070-333228 | GUSSET FWD UPPER CTR CONSOLI  | E  |      |            |
| 38   | VL70-730525 | GLARESHIELD, SUPPORT  |  |      |            |
| 39   | VL70-730150 | GLARESHIELD, ASSY, SUPPORT  |  | REV. | A01        |
| 40   | V070-730500 | GLARESHIELD, F2 F4  |  |      |            |
| 41   | V070-730809 | CTR CONSOLE SUB STRUCT  |  |      |            |
| 42   | vo70-333602 | RH SUPP STRUCT CIRC. BK   |  |      | *          |
| 43   | V070-333603 | LH SUPP STRUCT CIRC. BK   |  | REV. | አበ1        |
| 44   |             | BC CLOSEOUT RH  |  |      | 1101       |
| 45   |             | LOWER CB DOOR   |  | REV. | A02        |
| 46   | V070-333638 | DOOR CB AFT UPPER   |  | REV. |            |
| 47   | •           | CB PANEL LH CLOSEOUT  |  | REV. |            |
| 48   | V070-333643 | COVER AFT LOWER   |  |      |            |
| 49   | V070-333651 | UPPER AFT CAP LH  |  | REV. | A01        |
| 50   | V070-333654 | LOWER ACCESS DOOR LH  |  | REV. | A01        |
|      |             |   |  |      |            |
|      |             | <b>-4-</b>  |  |      |            |
| ٠.   | •           |   | garaga kan dari dari dari dari dari dari dari dari |      |            |
|      |             |   |  |      |            |
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| <u>ITEM</u> | NUMBER              | DESCRIPTION                 | SOURCE | COMMENTS |
|-------------|---------------------|-----------------------------|--------|----------|
| 51          | V070-333601         | MSS PANEL RH                |        |          |
| 52          | V070-333619         | MSS CLOSEOUT                |        |          |
| 53          | V070-333€18         | MSS SUPPORT ANGLE           |        |          |
| 54          | <b>v</b> 070-730780 | UPPER RH EB PANEL           |        |          |
| 55          | <b>v</b> 070-730990 | LOWER RH CB PANEL           |        |          |
| 56          | V070-650150         | EJECT SEAT SUPT STRUCT INST | TL .   | REV. A01 |
| 57          | V070-650100         | CREW ESCAPE SYS INSTL       |        |          |
| 58          | ME621-0057          | EJECT SEAT CREW ESCAPE SYS  |        | REV. A01 |
| 59          | vo70-650156         | CHANNEL, VERT SIDE, EJ SEAT |        |          |
| 60          | V070-650160         | SUPPORT STRUCT ASSY         |        |          |
| 61          | VO70-650151         | WEB-LOWER FWD EJSS          |        |          |
| 62          | V070-650153         | RAIL, GUIDE, EJSS           |        |          |
| 63          | V070-6503.61        | CHANNEL CLOSEOUT LWR STRUCT | ?      |          |
| 64          | vo70-650163         | EJ GUIDE RAIL-UPPER SUPPORT | •      | ,        |
| 65          | V070-650166         | LOWER ATTACH FITTING-EJS    |        |          |
| 65          | V070-650167         | FITTING-LOWER ATTACH ASSY-E | ijs .  |          |
| 67          | <b>vo70-</b> 650173 | SUPPT LOWER GUIDE RAIL-EJS  |        | REV. A01 |
| 68          | V070-650174         | SUPPT UPPER EJ GUIDE RAIL   |        | REV. A01 |
| 69          | <b>V070-65</b> 0179 | FITTING UPPER FRAME-EJS.    |        |          |
| 70          | VO70-650181         | SHIM RAIL ATTACH-EJS        |        |          |
| 71          | VO70-650183         | SHIM INTERMED, RAIL ATTACH  | -EJS   |          |
| 72          | VO70-650185         | SHIM FITTING EJS LOWER ATT  | ACH    |          |
| 73          | V070-331301         | CROSS BEAM-EJS              |        | REV. A01 |
| 74          | V070-730500         | DISPLAYS F2 & F4            |        |          |
| 75          | V070-333323         | CLOSEOUTS                   |        | ·        |
| 76          | V070-573006         | BUNGEE ASSY                 | ÷      |          |

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| ITEM | NUMBER      | DESCRIPTION  | SOURCE | COMMENTS      |
|------|-------------|--------------|--------|---------------|
| 77   | V070-573009 | HOUSING      |        |               |
| 78   | V070-573015 | SPRING       |        |               |
| 79   | V070-573G64 | ROD          |        |               |
| 80   | V070-573025 | BELL CRANK   |        | •             |
| 81   | V670-573024 | BELL CRANK   |        |               |
| 82   | V070-573002 | CONTROL ASSY | •      |               |
| 83   | VL70-573004 | LAYOUT       |        |               |
| 84   | V070-573039 | BELL CRANK   |        | REV. A01      |
| 85   | V070-573035 | BELL CRANK   |        |               |
|      |             |              |        |               |
| 86   | V070-573023 | SUPPORT      |        |               |
| 87   | V070-573047 | BUNGZE       |        | REV. A        |
| 88   | V070-573030 | SPRING       |        |               |
| 89   | V070-333235 | CHANNEL      |        |               |
| 90   | V070-573019 | BELLCRANK    |        |               |
| 91   | V070-573059 | RETAINER     | •      |               |
| 92   | V070-573068 | CLEVIS       |        |               |
| 93   | V070-573003 | PEDAL        |        |               |
| 94   | V070-573004 | ARM          |        | REV. A01      |
| 95   | V070-573021 | SUPPORT      |        | REV. A01      |
| 96   | V070-573057 | BRACKET      | •      |               |
| 97   | V070-573060 | ARM          |        |               |
| 98   | V070-573077 | SUPPORT      |        | REV. A01      |
| 99   | V070-573034 | SPRING       |        |               |
| 100  | V070-573001 | INSTALLATION |        | (IN COMPLETE) |
| 101  | ME131-0028  | BEARING      |        |               |

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|---|-------------|---|----------|
| ITEM  | NUMBER      | DESCRIPTION                             | COMMENTS |
|   |             |   |          |
| 102   | ME162-0012  | ROD ASSY                                |          |
| 103   | V070-333302 | BULKHEAD L.S. AFT                       |          |
| 104   | V070-333303 | COVER                                   |          |
| 105   | V070-333304 | FRAME FWD OUTBOARD                      |          |
| 106   | V070-333305 | FRAME ASSY SUR. 'B' DISPLAY PNL SUPPORT | •        |
| 107   | VO70-333306 | FRAME ASSY SUM. 'A' DISPLAY PNL SUPPORT | REV A-01 |
| 108   | V070-333309 | STRUT-OUTBOARD                          | •        |
| 109   | V070-333310 | ANGLE FLOOR                             |          |
| 110   | V070-333312 | SUB. FRAME FWD OUTBOARD                 |          |
| 111   | V070-333314 | FITTING SIDE CONSOLE TO MAIN DISPLAY    |          |
| 112   | vo70-333316 | TEE-SIDE PANEL AFT                      |          |
| - 113   | V070-333317 | ANGLE DIAGONAL FWD                      |          |
| 114   | VO70-333318 | STIFFENER SIDE PANEL L.S. AFT           |          |
| 115   | V070-333319 | SKIN SUP. STRUCTURE                     | REV. A01 |
| 116   | V070-333320 | DOOR SPEED BRAKE                        |          |
| 117   | vo70-333321 | INTERCOSTAL SUP. SPEED BRAKE L.S.       |          |
| 118   | VO70-333322 | ANGLE SUP. SPEED BRAKE LOWER            | REV. A01 |
| 119   | V070-333324 | CHANNEL SPEED BRAKE HORIZONTAL BRACE    | •        |
| 120   | V070-333325 | STRUT OUTBOARD                          | REV. A01 |
| 121   | VO70-333301 | SUP. STRUCTURE L.S.                     | REV. A01 |
| 122   | V070-333307 | FRAME ASSY AFT R. H. SIDE               |          |
| 123   | V070-333325 | STRUT OUTBOARD                          |          |
| 124   | V070-333311 | STIFFENER                               | REV. A01 |
| 125   | V070-333313 | BRACE VERTICAL PANEL                    |          |
| 126   | V070-333402 | BULKHEAD R.S. AFT                       | REV. A02 |
| 127   | V070-333405 | FITTING SUP. SPEED BRAKE                | :<br>: . |

| ITEM | NUMBER              | DESCRIPTION                      |         | COMMENTS      |
|------|---------------------|----------------------------------|---------|---------------|
| 128  | V070-333406         | FRAME ASSY FWD R.H.S SUP. B      |         | REV. A01      |
| 129  | V070-333467         | HINGE SIDE CONSOLE               |         |               |
| 130  | V070-333409         | BEAM LONGITUDINAL .              |         |               |
| 131  | V070-333410         | PANEL SHEAR HORIZ.               |         |               |
| 132  | V070-333412         | TEE FLOOR TO MCC                 |         | REV. A01      |
| 133  | V070-333413         | ANGLE VER. FWD                   |         |               |
| 134  | V070-333415         | STIFFENER R.S. AFT               |         | REV. A01      |
| 135  | V070-333416         | CLIP BEAM                        |         |               |
| 136  | V070-333424         | ANGLE                            |         |               |
| 137  | V070-333426         | FTG CLOSEOUT SIDE TO MAIN DISPLA | Y CONSO | LE REV. A01   |
| 138  | V070-333427         | HINGE VERTICAL PANEL             |         |               |
| 139  | V070-333408         | ANGLE FLOOR ATTACH               |         | REV. A01      |
| 140  | %870 <b>-333417</b> | STIFFENER                        |         | REV. A01, A02 |
| 141  | V070-333411         | FRAME DISPLAY PNL SUR. 'A'       |         |               |
| 142  | V070-333421         | COVER AFT SIDE CONSOLE CLOSEOUT  |         |               |
| 143  | V070-333422         | COVER FWD SIDE CONSOLE CLOSEOUT  |         | REV. A01      |
| 144  | V070-333423         | CLOSEOUT INSTL-CONSOLE CREW MODU | LE      |               |
| 145  | V070-333511         | FRAME SUPP. EYEBROW              |         |               |
| 146  | V070-333512         | BRACKET, INTERMEDIATE EYEBROW    |         |               |
| 147  | V070-339002         | BRACKET WIRE HARNESS             |         |               |
| 148  | V070-339003         | BRACKET AIR RETURN DUCT          |         |               |
| 149  | V070-331070         | (                                | EO) A-  | 06            |
| 150  | V070-331056         | SILL UPPER (                     | EO) A-  | 03            |
| 151  | V070-331015         | WINDSHIELD FRAME (               | EO) B-  | 09            |
| 152  | V070-331102         | WINDSHIELD (                     | EO) A-  | 05            |
| 153  | VL70-000-202        | LINES (                          | EO) B   | CHANGE        |
| 154  | V070-331060         | SILL, LOWER (                    | EO) A-( | 04            |

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| ITEM | NUMBER        | DESCRIPTION        |                 | COMMENTS    |
|------|---------------|--------------------|-----------------|-------------|
| 155  | VL70-003293   | FORWARD FUSS.      | REV             | A-01        |
| 156  | V070-331104   | SPACER             |                 | A-02        |
| 157  | V070-331113   | SPACER             | ٠               | A-03        |
| 158  | V070-331111   | WINDSHIELD         |                 | A-06        |
| 159  | V070-331112   | WINDSHIELD         |                 | A-05        |
| 160  | V070-331105   | RETAINER           |                 | <b>∧</b> 04 |
| 161  | V070-331101   | WINDSHIELD         |                 | A-02        |
| 162  | V070-331070   | PANEL SKIN         |                 | A-08        |
| 163  | V170-000143   | LINES              |                 | B CHANGE    |
| 164  | VL70-000204   | LINES              |                 | A-01        |
| 165  | V070-331011   | PRIMARY STRUCT     | :<br>:          | A-01        |
| 166  | V070-33-000   | MASTER DIM         | LAST REV        | 501-75      |
| 167  | THRU 33-073.5 | 0 (BOOK)           |                 |             |
|      | DATA USED IN  | GENERATING EYEBROW | PANEL STRUCTURE |             |
| 168  | V070-333515   | ANGLE              |                 |             |
| 169  | V070-333513   | BRACKET            | (EO)            | A-01        |
| 170  | V070-333503   | HINGE              | (EO)            | A-01        |
| 171  | vo70-333514   | FRAME              | (EO)            | A-02        |
| 172  | V070-333512   | BRACKET            |                 | A-01        |
| 173  | V070-333520   | CLIP               |                 |             |
| 174  | V070-650412   | SUPPORT            | (EO)            | A-01        |
| 175  | VO70-333519   | PANEL              |                 | A-01        |
| 176  | V070-333502   | SUPPORT STRUC.     |                 | A-02        |
| 177  | vo70-333511   | FRAME              | •               | A-01        |

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| MAIN | DISPLAY | SUPPORT | STRUCTURE |
|------|---------|---------|-----------|
| 1.11 |         |         |           |

| ITEM | NUMBER            | DESCRIPTION                     | COMMENTS   |
|------|-------------------|---------------------------------|--|
| 178  | MC615-0006        | DU SPEC.                        | REV 3 01   |
| 179  | V070-730559       | CHASSIS F6 & F8                 | REV A  |
| 180  | vo70-730601       | FRAME, MAIN CENTER DISPLA       | ¥  |
| 181  | V070-730160       | CHASSIS. F7                     |  |
| 182  | V070-613730       | BRACKET-AIR COOLED AVIONI       | CS REV A 02  |
| 183  | V070-613734       | SEAL                            | REV A 05   |
| 184  | V070-613733       | CUP                             | REV A 02   |
| 185  | V070-730010       | CONSOLE INSTALLATION            | \$   |
| 186  | V070-730559       | CHASSIS F6 & F8                 |  |
| 187  | V070-730554       | BRACKET, SUPPORT ADI            | REV A 01   |
|      | FRAME/FLOOR       | - COCKPIT                       |  |
| 188  | $\mathcal{E}^{*}$ | INSTALLATION, FLOOR FLIGHT DECK | A-61   |
|      | LIGHTING          |                                 |  |
| 189  | V070-730500       | GLARESHIELD, DISPLAY & CONTROLS | <del>-</del>   |
| 190  | VL70-730150       | LAYOUT-GLARESHIELD ASSY         | REV A-01   |
|      | AIR COND.         |                                 |  |
| 191  | MC615-0006        | SPEC D.U.                       | REV A  |
| 192  | MC615-0008        | SPEC D.E.U                      | REV A  |
| 193  | VL70-003199       | CABIN VENT DUCT ROUTING         | REV A  |
| 194  | V070-613730       | BRKT-AIR COOLED AVIONICS        | REV A-02   |
| 195  | V070-613728       | DUCTING INSTL.                  | en de la companya de<br>La companya de la co |
| 196  | V070-333901       | SUPPORT INSTL                   |  |
| 197  | VL70-730160       | LAYOUT-MAIN CENTER              |  |
| 198  | V070-613651       | PANEL-OUTLET                    |  |

# OAS ROTATIONAL HAND CONTROLLER (RHC) ROCKWELL PRINTS

|     | NUMBER        | DESCRIPTION                                  |
|-----|---------------|--|
| 199 | V070-730916   | BRACKET-VERTICAL SUPPORT-RHC REV. A (NO. EO) |
| 200 | V070-730911   | FITTING-VERTICAL SUPPORT, RHC                |
| 201 | V070-731006   | FITTING-ANGULAR ADJUSTMENT-RHC               |
| 202 | V070-731010   | WASHER-VERTICAL ADJ-PIVOT, RHC               |
| 203 | V070-731009   | SPACER-VERTICAL ADJ-PIVOT, RHC               |
| 204 | V070-731008   | YOKE-VERTICAL SUPPORT, RHC                   |
| 205 | V070-731013   | SLEEVE-SHROUD SUPPORT, RHE                   |
| 206 | V070-731017   | SHROUD-HALF-RH DEFLECTOR & WIRE GUARD        |
| 207 | V070-731015   | BOOT-RHC                                     |
| 208 | MC621-0043    | ROTATION HAND CONTROL PAGE 229 & 230 REV B   |
|     |               | SPEC. FIG. 48 SHEET 1 & 2                    |
| 209 | V079-730015   | ROTATIONAL HAND CONTROL REV A                |
|     | ·             | FLIGHT CREW STA. INSTL                       |
| 210 | V070-730910 ~ | RHC VERTICAL ADJ-ASSY                        |
| 211 | V070-731005   | RETAINER-ANGULAR ADJUST KNOW                 |
| 212 | V070-731014   | BOOT & BRACKET - ASSY                        |
| 213 | VC70-730918   | TUBE-VERTICAL ADJUSTMENT                     |
| 214 | V070-731001   | KNOB, ANGULAR ADJ.                           |
| 215 | V070-730912   | PLUG, VERTICAL ADJ. FLIGHT CONTROL           |
| 216 | V070-333101   | CONSOLE INSTL. AIN DISPLAY REV A EO-03       |

| ITEM  | NUMBER  | <u>DESCRIPTION</u> <u>COMMENTS</u>  |
|---|---|---|
| 217   | V070-730913   | HANDLE-VERTICAL ADJUSTMENT  |
| 218   | V070-730915   | TUBE, OUTER-VERTICAL ADJ.   |
| 219   | V070-730914   | SPRING-COMPRESSION  |
| 220   | V070-730917   | TUBE-VERTICAL ADJ.  |
| 221   | V070-731002   | NUT-ANGULAR ADJUST KNOB   |
| 222   | V070-731003   | CLAMP-ANGULAR POSITION ADJ.   |
| 223   | V070-731004   | COLLAR-ANGULAR POSITION ADJ.  |
| 224   | V070-731007   | FITTING, - FWD THRUST, RHC  |
| 225   | V070-731012   | SPACER-ANGULAR ADJUSTMENT PIVOT   |
| 226   | V070-731016   | BRACKET-BOOT SUPPORT, RHC   |
|   |   |   |
| 227   | VO70-331635   | BEAM, FLIGHT-DECK REV A, EO-3   |
| 227<br>228                                    | vo70-331635<br>vo70-731104  | BEAM, FLIGHT-DECK REV A, EO-3  PNL - F6A1 FWD CONSOLE CONTROL DISPLAYS  |
|   |   |   |
| 228   | V070-731104   | PNL - F6A1 FWD CONSOLE CONTROL DISPLAYS   |
| 228<br>229                                    | V070-731104<br>V070-731101  | PNL - F6A1 FWD CONSOLE CONTROL DISPLAYS CHASSIS F6A1  |
| 228<br>229<br>230                             | V070-731104<br>V070-731101<br>V070-731102   | PNL - F6A1 FWD CONSOLE CONTROL DISPLAYS CHASSIS F6A1 PNL F6A1 FWD CONSOLE C/D   |
| 228<br>229<br>230<br>231                      | V070-731104<br>V070-731101<br>V070-731102<br>V070-731270  | PNL - F6A1 FWD CONSOLE CONTROL DISPLAYS CHASSIS F6A1 PNL F6A1 FWD CONSOLE C/D PNL L5A1 S/CONSOLE C/D  |
| 228<br>229<br>230<br>231<br>232               | V070-731104<br>V070-731101<br>V070-731102<br>V070-731270<br>V070-731272                               | PNL - F6A1 FWD CONSOLE CONTROL DISPLAYS CHASSIS F6A1 PNL F6A1 FWD CONSOLE C/D PNL L5A1 S/CONSOLE C/D BRACKET PNL L5A1   |
| 228<br>229<br>230<br>231<br>232<br>233        | V070-731104<br>V070-731101<br>V070-731102<br>V070-731270<br>V070-731272<br>V070-731330                | PNL - F6A1 FWD CONSOLE CONTROL DISPLAYS  CHASSIS F6A1  PNL F6A1 FWD CONSOLE C/D  PNL L5A1 S/CONSOLE C/D  BRACKET PNL L5A1  PNL C2A2 CTR CONSOLE C/D             |
| 228<br>229<br>230<br>231<br>232<br>233<br>234 | V070-731104<br>V070-731101<br>V070-731102<br>V070-731270<br>V070-731272<br>V070-731330<br>V070-731400 | PNL - F6A1 FWD CONSOLE CONTROL DISPLAYS CHASSIS F6A1 PNL F6A1 FWD CONSOLE C/D PNL L5A1 S/CONSOLE C/D BRACKET PNL L5A1 PNL C2A2 CTR CONSOLE C/D PNL 02, OVED C/D |

#### DATA BOOK

# B. CREW STATION (CONTROLS & DISPLAYS)

### 1.0 Scope

This section of the SMS Data Book identifies the design data base for the SMS Crew Station Controls and Displays.

# 2.1 Design Data

The design data used in Crew Station C&D design is listed in Table 2.1-1.

# 2.2 Assumptions

All components and instruments accepted for use in the OAS shall be used in the SMS without any revisions.

SPD assumes the X-pointer (GFE) will be similiar to LPN 582882 (LEM unit).

| BOOK |
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Table 2.1-1

COMMENTS 6 GFE, LMS reuse PRECEDING PAGE BLANK NOT FILMED -PAGE SOURCE NAR Meter, Electrical Indicating, Vert Scale; A; 8/14/74 Digital, Propellant Quantity; A; Display Panel Configuration Orbiter Flight 1 12/12/75 plus changes Round Scale; Indicator, Horizontal Situation; A 1/3/75 Indicator, Altitude/Vertical Velocity; A Indicator, Attitude Director; B 9/19/75 Annunciator Assembly, (40) Caution and Surface Position; A 2/25/75 Audio Distribution System; C; 8/1/75 Indicator, Accelerometer; B 5/16/75 Crew Station - Controls and Displays Caution & Warning Electronics Unit Status Display (120); B; 4/8/75 Indicator, Alpha/Mach; A 2/13/75 DESCRIPTION Meter, Electrical Indicating, Indicator, Event; A; 7/27/74 Meter, Tape; A; 8/1/74 10/3/75 Deck, OV-102; Rev. contained in DTD.6 Warning; B; Indicator, Indicator, A: 8/14/74 12/15/75 2/13/75 VL70-730102 0232 0235 0229 0238 MC434-0069 0219 0222 0224 0226 0237 0221 MC409-0005 MC409-0012 MC432-0218 SYSTEM NUMBER

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# SYSTEMER Station - Controls & Displays (Con't)

PAGE 2 OF 3

| TEM | NUMBER     | DESCRIPTION   | SOURCE                                  | COMMENTS   |
|-----|------------|---|---|--|
| 97  | MC434-0073 | Annunciator Assembly, (8), Fire Warning; A; 10/30/74                | NAR                                     | Revised as 10-display<br>for SMS, data not rec'd |
| 17  | 0075       | Annunciator, Single Event; A; 10/30/74                              |   |  |
| 18  | 9200       | Annunciator, Special (3), A, 10/30/74                               |   |  |
| 19  | 000        | Annunciator Assembly, (5) Event Sequence                            |   |  |
| 20  | 0800       | Annunciator Assembly (25), Performance<br>Monitor; New; 1/10/75     |   |  |
| 21  | MC452-0060 | Switch, Pushbotton; S; 7/19/68                                      | - · · · · · · · · · · · · · · · · · · · |  |
| 22  | 0061       | Switch, Pushbutton, Sequence Stack; T; 7/20/69                      |   |  |
| 23  | 0003       | Switch, Rotary; J; 8/7/74   |   |  |
| 24  | 0102       | Switch, Toggle, H; 10/11/68   |   |  |
| 25  | 0134       | Switch, Thumbwheel, Digital Select; B; 4/25/75                      | · · · · · · · · · · · · · · · · · · ·   |  |
| 26  | MC454-0026 | Circuit Breaker, Thermal; B; 8/1/75                                 |   |  |
| 27  | MC456-0053 | Event Timer; A; 7/10/75   |   |  |
| 28  | 0054       | Mission Timer; A; 7/10/75   |   |  |
| 29  | MC615-0006 | Display Unit, Orbiter (CRT); B; 7/7/75                              |   |  |
| 30  | 0000       | Keyboard Unit, Orbiter; B; 7/7/75                                   |   | •  |
| 31  | 8000       | Display Electronics Unit; B; 7/7/75                                 | · · · · · · · · · · · · · · · · · · ·   | 4 33   |
| 32  | MC621-0043 | Space Shuttle Flight Control Subsystem (RHC, THC, SBTC); B; 2/14/75 |   | RHC & THC are GFE                                |
|     |            |   | -                                       |  |

SYSTEM Crew Station - Controls & Displays (con't)

PACE 3 OF 3

| i sir. |             | e i u taka Piku i ki hizhio a bili              | er zw.∎                          | ara estre e                             | · (4 ). W                | a real action   | ener to come                                       |                |                   |                       | 1.                |                           | <b></b>                  | 4a*                            |   | • | . • |
|--------|-------------|---|----------------------------------|---|--------------------------|---|--|----------------|-------------------|-----------------------|-------------------|---------------------------|--------------------------|--------------------------------|---|---|-----|
|        | COMMENTS    |   |                                  |   |                          |   |  | GFE, LMS reuse | Data not received | Data not received     | Data not received | Data not received         | Data not received        | Data not received              | · |   |     |
|        | SOURCE      |   |                                  |   |                          | ARINC   | IBM  | SINGER         |                   |                       |                   |                           |                          |                                |   |   |     |
|        | DESCRIPTION | Indicator, Position Indicating, Landing<br>Gear | Potentiometer, Sealed; H; 2/8/74 | Transformer, Variable, Power; D; 2/6/74 | Interior Lighting Rev. A | Mark 3 Sub-sonic Air Data System (Digital)<br>DADS Issued July 15, 1971 | SID Interface Definition Document Rev. B; 10/22/75 | X-Pointer      | X-Pointer         | Rendz Radar Indicator | COAS              | X Manipulator Control Arm | Panel Overlay Lighting   | Overhead Incandescent Assembly |   |   |     |
|        | NUMBER      | ME432-0253                                      | ME444-0049                       | ME446-0034                              | MC343-0068               | ARINC575-3  | 7931074  | 582882         | MC432-0233        | 0255                  | V070-660810       | ICD3-0018-XX              | MC434-0082<br>thru -0282 | MC434-0078                     |   |   |     |
| ľ      | Ĭ           | 33  | 34                               | 35                                      | 36                       | 37  | 38   | 39             | 40                | 4.1                   | 42                | 43                        | 44                       | 45                             |   |   |     |

# "SMS-DATA BOOK"

IDENTIFYING INCREMENTATL SECTION RELEASE SHEET

The following is part of Section 22, WP #22.

Instructor Operator Stations

DATA BOOK INSTRUCTOR OPERATOR STATIONS

# 1.0 Scope

This section of the SMS Data Book identifies the design data base for the SMS Instructor-Operator-Observer Stations.

# 2.0 Design Data

The Design Data used in the SMS Instructor-Operator-Observer Stations is listed in Table 2.0-1.

# 2.1 Assumptions

None

SMS DATA BOOK

Table 2.0-1

Instructor Operator Stations

SYSTEM

PAGE 1 OF 1

| SID Interface Definition Document, 10/22/75 IBM  SID Interface Definition Document, 10/22/75 IBM  MASA  007 Keyboard Unit; B;  MASA  Addendum A to S.O.W. SWS Design Specifications  MASA  MASA  MASA  MASA  MASA  MASA  MASA | ŀ                                      |      |                           |        |         | eran sera  |
|---|--|------|---------------------------|--------|---------|--|
| B; ; B; ronics Unit; B; S.O.W. SMS Design Specifications  | NUMB                                   | ER   | DESCRIPTION               | SOURCE | COMENTS | oloskalos dibela   |
| ronics Unit; B; S.O.W. SMS Design Specifications  | 7531074                                |      |                           | IBM    |         | تاب عود العام الم  |
| Meyboard Unit; B; Display Electronics Unit; B; Addendum A to S.O.W. SWS Design Specifications   | MC615-                                 | 9000 |                           | NASA   |         | Now will describe  |
| Display Electronics Unit; B; Addendum A to S.O.W. SMS Design Specifications   | MC615-0                                | 1007 | Keyboard Unit;            | NASA   |         | · Variable   |
| SMS Design Specifications   | MC615-0                                | 8000 | Display Electronics Unit; | NASA   | •       | American Africa  |
|   |  |      | SMS Design                | NASA   |         |  |
|   |  |      |                           |        |         | and the control of th |
| _   | ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,, |      |                           |        |         |  |

# . "SMS-DATA BOOK"

IDENTIFYING INCREMENTAL SECTION RELEASE SHEET

The following is part of Section 24, WP #24.

Subsection: Power and Grounding.

DATA BOOK

POWER AND GROUNDING

1.0 Scope

This section of the SMS Data Book identifies the design data base for the SMS Power and Grounding

2.0 Design Data

The Design Data used in the SMS Power and Grounding is listed in Table 2.0-1.

2.1 Assumptions

None

SYSTEM Power and Grounding

Table 2.0-1

PAGE | OF

| COMMENTS    |   |  |   |  |  |   |  |  |
|-------------|---|--|---|--|--|---|--|--|
| SOURCE      |   | IBH  | Singer                                      | Singer   | Singer   | Singer  | NASA   |  |
| DESCRIPTION | Interdata Installation Planning Guide, July '74 | SID Interprete Definition Document, 10/22/75 | OAS CEI, Part I, Power and Grounding 3/5/76 | AST Sub-Controller & System Card Tech. Report, 10/14/75. | General Work Instructions for Product Design<br>for Contract NAS9-14910, 13 Feb '76. | Standard Engineering Practices Manual, Revision C, 1/'74. | Addendum A to S.O.W SMS Design Control Spec. |  |
| NUMBER      | Pub. No.<br>38-089                              | 7931074                                      |   | AST-9  | WI-537-42  |   |  |  |
| TEX         | H   | 7  | m   | 4  | ம  | v   | 7  |  |